# Remarks

In the Office Action dated August 8, 2002, the Examiner objected to the disclosure because the article "Geometrically Weighted Semiconductor Frisch Grid Radiation Spectrometers" is not prior art and reference to its information should be removed from the specification under the Background of The Invention at page 5 of the specification. The Examiner also repeated the prior art rejections under 35 U.S.C. §§ 102 and 103 contained within the Office Action dated December 5, 2001.

By this Amendment, Applicants' Attorney has removed reference to the article "Geometrically Weighted Semiconductor Frisch Grid Radiation Spectrometers" from the specification at page 5.

With respect to the Examiner's rejections based on the prior art under 35 U.S.C. § 102 and 103, the Examiner is requested to consider the following remarks.

Basically, the present invention, as defined by each of the independent claims, requires the display of stereoscopic data in the form of radiation images superimposed on a view of the environment so the user can obtain or see a 3D view of the radiation by utilizing natural human stereo imaging processes.

As disclosed on lines 15-17 of the Abstract, "The invention exploits the human brain's ability to naturally reconstruct a 3D, stereoscopic image from 2D images generated by two "imagers" separated by a known angle(s) without the need for 3D mathematical image reconstruction. As further noted on page 20 lines 7-9, natural human stereo imaging processes include "parallel line convergence, binocular disparity, shading and texture cues, and image motion parallax."

As noted on page 17, lines 1-7, "care must be taken in the selection of the detector subsystem to ensure that appropriate stereoscopic data result. For example, the

primary detector subsystem used for the ionizing radiation visualization could be a pair of gamma-ray cameras adapted to provide the stereoscopic data. For optimal performance, these cameras would require not only planar imaging capability from different angles, but focusing or production by other means of the image information needed for stereoscopic vision."

As also noted on page 14, lines 17-18, the stereoscopic data of the present invention may be derived from 3D maps which are reconstructed by means of topographic algorithms. As further noted on page 19, lines 8-11, a computer could use a mapping algorithm to reconstruct and interpolate the data into one smooth 3D map. This map could then be processed to obtain the necessary stereoscopic data.

The claimed "stereoscopic data" is simply not found in the prior art of record. Such data is provided by a carefully selected detector subsystem and not merely by the detector subsystems of the prior art wherein only planar imaging is obtained.

Simply put, the prior art of record taken either alone or in combination fails to disclose the claimed "stereoscopic data," as only provided by the present invention, in the form of radiation images superimposed on a view of the environment so that a user can obtain a 3D view of the radiation by utilizing natural human stereo imaging processes. The prior art taken either alone or in combination with one another simply fails to disclose "stereoscopic data" in the form of such images superimposed on a view so that a user obtains a 3D view of radiation by utilizing his or her stereo imaging processes.

Consequently, in view of the above and in the absence of better art Applicants' Attorney respectfully submits that the application is in condition for allowance which allowance is respectfully requested.

Respectfully submitted,

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Attachment

# VERSION WITH MARKINGS TO SHOW CHANGES MADE

## In The Specification

Recent results with novel geometrically weighted Frisch grid CdZnTe detectors demonstrate dramatic improvements in gamma-ray resolution [(McGregor et al., 1999; McGregor and Rojeski, 1999)]. The devices no longer require signals from hole transport, hence the higher carrier extraction factor values of the electrons can be manipulated while ignoring the difficulties imposed by hole trapping. The device uses the geometric weighting effect, the small pixel effect and the Frisch grid effect to produce high gamma-ray energy resolution. The design is simple and easy to construct. The device performs as a gamma-ray spectrometer without the need for pulse shape rejection or correction, and it requires only one signal output to any commercially available charge sensitive preamplifier. The device operates very well with conventional NIM electronic systems. Presently, room temperature (23°C) energy resolutions of 2.68% FWHM at 662 keV and 2.45% FWHM at 1.332 MeV have been measured with 1 cubic cm CdZnTe devices.